

This species appears to be related to *B. erymothauma* of northern Chile, but that is a much larger shell, 12 to 15 mm. in diameter with about the same number of whorls. The spire of *B. fisheri* is much higher than that of the Chilean species and the umbilicus is not so wide. Some specimens show very weak traces of axial wrinkles.

This addition to the small group of carinate *Bostryx* is named in honor of its discoverer.

With these shells there is a fragmentary spire of some other species having a thin keel projecting above the suture, the generic relation unknown.

BEACH DRIFT POLYGYRIDAE FROM SOUTHERN TEXAS

By HENRY A. PILSBRY AND LESLIE HUBRICHT

At the bases of the dunes, near the beaches along the Gulf of Mexico in southern Texas, are to be found incredible numbers of land shells which have been washed in from the sea. Most of these shells are of species which are found living in Texas, but many of them are of Mexican species. The Texas shells appear to be derived from the drainages of the Rio Grande, Brazos, and Colorado Rivers. Not many shells characteristic of the Mexican side of the Rio Grande drainage were found. The El Azucar dam on the lower Rio San Juan and the Don Martin dam on the Rio Salado have apparently prevented many shells from reaching the sea. Most of the Mexican shells appear to be from farther south, from the Rio Pánuco drainage southward.

Shells were collected at the following three places. The abbreviations BC, PIa, and PIb are used, followed by the number of specimens found.

BC. Near the mouth of the Rio Grande, 1 mile south of Boca Chica, Cameron Co., Texas. At this locality, shells were found literally by the millions. Most of the shells were *Polygyra texasiana*. Sorting through the piles of this species became so tedious that not as many foreign shells were found here as at the other localities where *P. texasiana* was not so abundant.

PIa. Padre Island, 2.5 miles north of the Port Isabel Causeway Road, Cameron Co. *T. texasiana* was not as abundant here, numbering in the thousands, but was still numerous enough to hamper collecting of the foreign shells.

PIb. Padre Island, 30 miles north of the Port Isabel Causeway Road, in Willacy Co., Texas. Here the percentage of Mexican shells was higher than at the other localities.

Polygyra cereolus (Mühlfeld), PIb-1.

Polygyra cereolus febigeri (Bland), PIa-3.

Polygyra auriformis (Bland), BC-2, PIa-61, PIb-101.

Polygyra oppilata (Morelet), BC-27, PIa-270, PIb-139.

Polygyra oppilata (Morelet) var. ?, BC-1, PIa-7, PIb-1.

These shells differ from typical *P. oppilata* in having a narrow channel separating the parietal tooth from the end of the upper lip. It may prove to be a distinct species.

Polygyra implicata (Martens), BC-23, PIa-145, PIb-217. This species has been considered a subspecies of *P. oppilata*, but there was no intergradation in the beach drift shells. The two species sorted without difficulty.

Polygyra leporina (Gould), BC-1, PIa-12, PIb-39.

Polygyra rhoadsi Pilsbry, BC-2.

Polygyra ariadnae (Pfr.), BC-1.

Polygyra texasiana (Moricand). The material found on the beaches shows all the variation in size and sculpture found in the species. In sculpture the shells vary from smooth to rib-striate above and below. Smooth shells are found living along the western edge of the range of the species, being found from the Pecos River eastward to Roma, Starr Co., Texas, and Oglesby, Coryell County. In Mexico it is found at Cerralvo, Nuevo Leon. Shells with basal rib-striae are found only within a few miles of the coast, in Cameron, Willacy, Calhoun, and Harris Counties, Texas.

Three sinistral specimens were found at Boca Chica.

Polygyra texasensis Pilsbry, BC-10, PIa-33, PIb-2.

POLYGYRA SCINTILLA, new species, pl. 5, figs. 3, 3a. BC-15, PIa-38, PIb-4.

The shell is strongly depressed, with rounded periphery, the spire very low or nearly flat. The surface is almost smooth, being finely striate above and below, with a few rib-striae behind

the lip. Color pale brown, usually with a narrow reddish-brown band above the periphery. The umbilicus has an externally small axial hole, expanding in the last half whorl to about one-seventh of the diameter of the shell. The last quarter whorl is strongly expanded, giving the shell an oval outline. The last whorl descends abruptly in front, and is deeply contracted behind the lip. The lip is reflected, forming about three-fourths of a circle, rather heavily callused within, strongly dished, with two rather slender teeth, set close together, one basal, the other on the outer margin. Parietal tooth v-shaped, lower branch straight or nearly so, upper branch with a slight curve. There is no internal tubercle on the columellar wall.

Height 3.6 mm. Diameter 7.5 mm. 4.3 whorls. Paratype.

Height 4.8 mm. Diameter 10.0 mm. 5.0 whorls. Paratype.

Height 4.2 mm. Diameter 9.1 mm. 4.7 whorls. Holotype.

TEXAS: Willacy Co.: along the railroad, 1.5 miles north of Raymondville. Holotype 196560 and Paratypes 196559 ANSP Paratypes 14407, collection of L. Hubricht. MEXICO: Nuevo Leon: drift, Rio Sabinas, Sabinas Hidalgo. Tamaulipas: loess, 1.4 miles southeast of Ciudad Mier; drift, Rio San Fernando, San Fernando; roadside, 9 miles southwest of Santa Teresa.

This species differs from *Polygyra texasiana* (Moricand) by its more depressed, more oval shell, and the smaller central hole of the umbilicus. The lip is more dished, the ends of the lip come closer together, and the teeth are more slender. The lower branch of the parietal tooth is straighter. The umbilical region resembles that of *P. jacksoni* (Bland).

For comparison we figure (pl. 5, figs. 2, 2a) *Polygyra polita* Pilsbry and Hinckley, 1907, described from Tampico, in river debris (Nautilus 21: 38, pl. 5, f. 11). This has a wider axial hole of the umbilicus than *P. scintilla* and the peristome is more "dished."

Polygyra texasiana tamaulipasensis Lea (pl. 5, figs. 1, 1a) as another related species, of which we figure the holotype, 117885 USNM., by courtesy of Dr. Rehder. It has a nearly flat spire of $4\frac{1}{2}$ whorls, with a diameter of 9.6 mm. The surface is nearly smooth except behind the upper and outer lip where there are five or six riblets. The umbilicus is contained about 4.8 times in the diameter. Its axial hole is larger than in *P. polita*, therefore much wider than in *P. scintilla*; and it differs from both in having the tooth of the outer lip on the same level

as the basal tooth. In *polita* and *scintilla* the outer tooth is more deeply placed, only partly visible in a direct basal view.

P. t. tamaulipasensis seems to be completely identical with the form described as *P. t. hyperolia* Pilsbry & Ferriss (Proc. A.N.S. Phila. 1906, p. 128, pl. 5, figs. 13-15) from the high mesa west of Devils River, Val Verde Co., Texas. Lea's type looks like a river drift specimen, having their characteristic polish.

Polygyra mooreana (W. G. Binney), PIa-83, PIb-192.

Polygyra tholus (W. G. Binney), BC-2, PIa-69, PIb-217. The shells of this species sorted from those of *P. mooreana* without difficulty.

Polygyra dorfeuilliana Lea, PIa-45, PIb-96.

Polygyra dorfeuilliana sampsoni Wetherby, PIa-1. For this specimen to have come from the known range of *sampsoni* in northwestern Arkansas or northeastern Oklahoma it would have had to drift down some Arkansas river into the Mississippi, thence into and across the Gulf of Mexico, which seems an impossible journey. It is more probable that it is an aberrant shell from somewhere in Texas.

Stenotrema lei aliciae (Pilsbry), BC-15, PIa-147, PIb-359.

Praticolella griseola (Pfr.), BC-2, PIa-2.

Praticolella berlandieriana (Moricand), BC-9, PIa-1.

Praticolella pachyloma ('Menke' Pfr.), PIa-1.

FRESH-WATER MOLLUSKS AND STREAM POLLUTION

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The intense interest throughout the nation today on pollution, clean-stream programs and conservation, has led to an intensification of study into the biological effects of pollution.

Pollution is commonly divided into three basic types. These are physical, such as siltation or high temperatures; chemical, such as acidity or toxic wastes; and biological or organic. The latter consists of organic waste material that is not in itself